

REMARKS

Claims 1-4 are pending in the present application. Claim 1 has been amended.

Claim 1 has been rejected under 35 U.S.C. § 103(a) as obvious over Harris (US 5,453,664) in view of Wu (US 5,343,147). This rejection is respectfully traversed.

Claim 1, as amended, recites that the series-wired light string of the present invention includes “a plurality of voltage-responsive *semiconductor* shunts, each *semiconductor* shunt being electrically connected in parallel across a respective light socket to maintain the current passing through the light socket in the event that a light bulb is not illuminated or is missing from the light socket.” Harris does not teach a semiconductor shunt, but rather teaches the use of two parallel resistive shunts.

Wu does not rectify the deficiencies of Harris. Wu teaches the use of a rectifier to convert AC voltage to DC voltage for a control circuit. Wu, however, contains no mention of the rectifier being used in the series-wired light string – it is used only in the control circuit. Wu also does not disclose the use of semiconductor shunts, a feature lacking from Harris as mentioned above. Accordingly, the combination of Harris and Wu does not render the invention as recited in amended claim 1 obvious, and the rejection should be withdrawn.

Claims 2-3 have been rejected under 35 U.S.C. § 103(a) as obvious over Harris in view of Wu as applied to claim 1, and further in view of Ray (US 4,211,955). Ray discloses a single diode rectifier and a bridge rectifier in a solid state lighting system comprising multiple LEDs to replace a single incandescent lamp. Applicant does not dispute that rectifiers are known to be used in lighting systems. However, the present invention, as recited in amended independent claim 1, is much more than just a rectifier

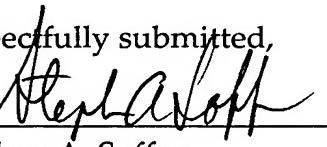
used in a lighting circuit. Ray does not rectify the deficiencies of Harris and Wu set forth above.

Claim 4 has been rejected under 35 U.S.C. § 103(a) as obvious over Harris in view of Wu as applied to claim 1, and further in view of Muench et al. (US 3,639,805). The Examiner asserts that it would have been obvious to insert the Zener diode of the DC automotive lighting circuit of Muench into the light string circuit of Harris, which uses resistive shunts. Why? The Examiner cites to Muench's statement that "the same type of circuit connection may be used with lamps other than headlamps (col. 2, lines 12-15." However, the remainder of the sentence from the quoted portion of Muench is telling: "for example, tail lamps, instrument panel lights, or side marker lamps on trucks and trailers." Taken in context, it is clear that Muench is suggesting that his circuit can be used in other automotive applications, all of which are powered by a flat-line 12 volt DC. In contrast, the present invention, as recited in amended claim 1, employs miniature light bulbs for Christmas tree lighting, which are typically configured in a series string and operated by the application of AC power, as in the circuit of Harris. Thus, it is not surprising that neither Harris nor Muench mention or even remotely suggest the use of a rectifier to convert AC power to DC current for operation of the lights. Yes, it is known to use a rectifier for AC to DC conversion, but of course, all inventions can be reconstructed in this piecemeal manner using impermissible hindsight to pick and choose teachings from various prior art references. The fact of the matter is that the present invention, a Christmas light string provided with a rectifier in series with the string and with semiconductor shunts across each miniature light bulb of the string, fulfilled a need and became a commercial success three decades after Muench's automotive lamp circuit was published, presenting a compelling case of non-obviousness.

In view of the foregoing, applicant submits that the present invention is distinguishable over the prior art of record, and that the application is in condition for allowance. A prompt passage to issuance is earnest solicited.

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Respectfully submitted,

By 
Stephen A. Soffen

Registration No.: 31,063

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

2101 L Street NW
Washington, DC 20037-1526
(202) 785-9700
Attorney for Applicant